

## The impact of local and national economic conditions on legislative election results

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### The impact of local and national economic conditions on legislative election results

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**The impact of local and national economic conditions  
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***Abstract:***

Using data for 278 Portuguese mainland municipalities, we estimate the impact of national and local economic conditions on legislative electoral outcomes over the period from the reestablishment of democracy in 1974 to the present. Empirical results indicate that the performance of the national economy is important but that the municipal situation also conditions electoral outcomes.

Keywords: Voting functions, opportunism, local governments, elections, Portugal.

JEL codes: H72, D72, D78

## 1. Introduction

The influence of economic conditions on electoral outcomes and on the popularity of incumbent politicians has been investigated at least since the 1970s, following the seminal works of Goodhart and Bhansali (1970), Mueller (1970), and Kramer (1971). Since then, numerous studies have proven the importance of economic voting, as surveyed by Paldam (2004).

Most researchers have used measures of aggregate economic conditions to explain incumbent party vote shares or survey-based measures of the popularity of political entities. However, there are good reasons to think that local economic conditions may influence national electoral results, independently from the national economy. First, people may hold incumbent politicians accountable for the local economy because they think the policies implemented have had a stronger impact on industries located in their area of residence. Second, although voters may intend to evaluate incumbents for the evolution of the national economy, they perceive local conditions more accurately and may use them as proxies for the overall situation of the country. An additional reason to use data disaggregated at the local level is that in regression analyses it increases the number of degrees of freedom, allowing for a richer analysis.

However, the number of papers assessing the importance of local economic indicators on national electoral outcomes is small, and most studies focus on the U.S. and the U.K.<sup>1</sup> All studies report evidence confirming that it is important to take into account local as well as national conditions when trying to explain national electoral results. In the context of the 1997 British general elections, Johnston and Pattie (2001) go even further, arguing that voters

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<sup>1</sup> Among others, see Holbrook (1991), Strumpf and Phillippe (1999), Eisenberg and Ketcham (2004) for U.S. presidential elections; and Johnston and Pattie (2001) for British general elections. For French legislative elections refer to Auberger and Dubois (2005).

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evaluated the incumbent government on the basis of their local area and personal situations, much more than on their evaluations of the state of the national economy.

For a recent democracy like Portugal, which changed regime in 1974, it is difficult to estimate aggregate time series voting functions for legislative elections. Veiga and Veiga (2004a) and Veiga and Veiga (2004b) tried to overcome this problem by analyzing monthly data for, respectively, the popularity of the four main Portuguese political entities, and vote intentions for the main political parties. Both studies presented supportive results for the hypothesis that the electorate holds incumbents responsible for the evolution of the economy, particularly for the behaviour of unemployment and inflation. However, the determinants of actual votes in legislative Portuguese elections have not yet been researched. The main objective of this paper is to fill this gap in the literature. By combining aggregate time series information with panel data at the municipal level, we increase the number of observations, which allows us to use votes as the dependent variable and to consider the impact of both national and economic conditions.

The paper is organized as follows. In section 2 we briefly describe the Portuguese legislative elections and parties in government. In section 3 we present the data and specify the empirical model. The empirical results are reported in section 4 and, finally, section 5 presents the conclusions.

**2. Portuguese legislative elections and parties in government**

After 48 years of dictatorship, the 25<sup>th</sup> of April 1974 revolution re-established democracy in Portugal. The initial years of the democratic period in Portugal were

characterized by political instability, with governments repeatedly falling before the ends of their terms. The first legislative elections for the Assembly of the Republic were held in April 1976, and Mário Soares, the leader of the Socialist Party (PS), led the first elected democratic government. Two presidentially appointed governments followed, before the balloting of 1979, in which the Democratic Alliance<sup>2</sup> (AD) won 42.2% of the votes, getting an overall majority of deputies in Parliament. Sá Carneiro, leader and founder of the Social Democratic Party (PSD), became the prime minister and in the October 1980 elections the AD renewed its overall majority of deputies. Two months later, Sá Carneiro died in an airplane accident and Pinto Balsemão was elected head of PSD and became Prime Minister. Divisions among coalition members caused the resignation of Pinto Balsemão in December 1982, and new elections were scheduled for April 1983.

**[Insert table 1 about here]**

In the 1983 balloting, the PS achieved 36.3% of the votes and formed a coalition government with the PSD. After the break-up of the coalition in 1985, elections were held in October and the PSD gained the largest vote share, but fell short of gaining a majority of seats in Parliament. Cavaco Silva formed a minority government, which fell in April 1987 following a no confidence vote.

During the 1987 election campaign Cavaco Silva emphasized the need of economic and political stability for Portugal's successful integration into the European Community, which had occurred in January 1986. The PSD won 50.1% of the votes in the legislative balloting of July 1987, and was able to form the first one-party overall majority since the end of the dictatorship, and was therefore also

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<sup>2</sup> A right-wing alliance formed by the Social Democratic Party (PSD), the Democratic and Social Center / People's Party (CDS/PP) and the Monarchic People's Party (PPM).

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the first to complete its term of office. A new majority was earned in the legislative elections of October 1991.

In the 1995 and 1999 legislative ballotings the PS got the largest vote share, 43.8% and 44.0% of the votes respectively, almost achieving overall majorities of deputies in Parliament. António Guterres, the leader of PS since 1992, became prime minister of the two PS minority governments. He resigned after the disappointing results the PS had in the December 2001 municipal elections, forcing the President of the Republic to call for early elections. In March 17, 2002 the PSD earned the most votes with a share of 40.1%, and it formed a coalition government with the third party, CDS/PP, which earned 8.7% of the votes. Following a Presidential dismissal of the government, elections were called for February 2005. Since then, the country has been run by the socialists, who have a comfortable overall majority of seats in the National Assembly, and José Socrates is the prime minister.

**3. Data and model specification**

The dataset consists of data on national economic variables and on a set of political, financial and economic variables for the 278 Portuguese mainland municipalities, for legislative election years. The national consumer price index, real GDP, industrial production index and employment were obtained from the IMF's *International Financial Statistics*, and the national unemployment rate was obtained from the OECD's *Main Economic Indicators*. Political data, namely election dates and electoral results were obtained from the Technical Staff for Matters Concerning the Electoral Process (*Secretariado Técnico dos Assuntos para o Processo Eleitoral- STAPE*) of the Internal Affairs Ministry. Data on the

total number of employees in firms within each municipality and on their average wages, which is available from 1985 to 2003, was obtained from the “*Quadros de Pessoal*” database, of the Portuguese Ministry of Labour and Social Solidarity (MTSS).<sup>3</sup> Data on municipal expenditures and grants received from the central government were obtained from the local authority’s (*Direcção Geral das Autarquias Locais*) annual publication called *Finanças Municipais* (Municipal Finances). This report exists from 1979 to 1983 and from 1986 to 2003. For the two missing years data was collected directly from the municipalities’ official accounts and are incomplete: we have 182 observations for 1984 and 189 for 1985. Data on municipal purchasing power indexes (available from 1993 to 2004) and population were obtained from the Portuguese National Institute of Statistics (*Instituto Nacional de Estatística- INE*). Finally, the municipal income index, since 1992, was obtained from the Marktest’s *Sales Index* database.

The empirical models are to be estimated using a panel of 278 municipalities, over a maximum of nine national legislative elections.<sup>4</sup> The dependent variable in all models is the percentage of votes obtained by the principal party in government (that of the Prime Minister) in the current elections, *Votes*. In the set of explanatory variables, we first include the percentage of votes obtained by the incumbent in the previous balloting, *Votes (Previous Election)*. This variable accounts for the support the main government party enjoyed at the start of the term and for factors not considered in the other explanatory variables,

<sup>3</sup> The “*Quadros de Pessoal*” is a yearly mandatory employment survey that covers virtually all privately owned firms employing paid labor in Portugal (public servants and own employment are not included). Although the most recent year for which data is available is 2003, unfortunately, there is no data on wages for 2001.

<sup>4</sup> There were 11 legislative elections since the restoration of democracy in 1974. But, the use of the results obtained by the principal government party in the previous election implies that the first one (1976) is not considered. The last one, which occurred in 2005, is also not considered because there is no data available for 2005 on most of the municipal level variables.



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such as personal characteristics, ideology and party affiliation of voters, socio-economic characteristics of each municipality, etc.

It is possible that, in each municipality, the votes for the main government party are affected by whether or not the mayor is affiliated with the latter. We account for this possibility by including the dummy variable *Government's Party*, which takes the value of one when the mayor's party is that of the Prime Minister, and equals zero otherwise. A positive coefficient can be expected if we assume that a mayor is able to help her party get more votes in her municipality. However, if voters prefer not to concentrate all the power in one party, a negative coefficient could result for this variable. This would be in accordance with Alesina and Rosenthal's (1996) model for the U.S., which predicts a midterm electoral cycle with the party holding the presidency always losing votes in midterm congressional elections.

As mentioned in the introduction, national economic conditions play an important role in legislative elections results. Furthermore, using time series data for Portugal, Veiga and Veiga (2004a and 2004b) showed that higher inflation and unemployment lead to lower popularity and vote intentions for the government. Thus, negative estimated coefficients are expected for inflation (the percentage change in the CPI) and for the change in the unemployment rate. We also account for national economic conditions by including GDP growth and changes in employment and in the industrial production index. Because higher values of any of these imply improving economic conditions, which should lead to more votes for the incumbent, positive coefficients are expected for these three variables.

We also expect municipal economic conditions to affect votes. Although there is no data on inflation and unemployment rates at the municipal level, there is information on some variables that reflect the local economy's performance. The first two used are the change in municipal employment and the change in average municipal real wages. Then, we include changes in two indexes that reflect municipalities' wealth: the INE's purchasing power index, and the *Marktest*'s income index.<sup>5</sup> Increases in any of these variables imply improving economic conditions, so positive coefficients are expected.

Finally, we account for the effects of grants transferred by the central government to each municipality. Veiga and Pinho (2005) have shown that in legislative election years, central governments increase the amount of funds transferred to municipalities, particularly non-formula grants.<sup>6</sup> If this opportunistic spending pays off in terms of votes obtained, the annual change in non-formula grants should turn out as statistically significant and positively signed.

The first group of estimations includes only the national economic variables, making its results easily comparable to those of Veiga and Veiga (2004a,b). Then, in a second group, municipal level variables are incorporated in order to determine if local conditions also affect national legislative election results. The empirical model can be summarized as follows:

$$\begin{aligned}
 & Votes_{it} = \alpha Votes_{i,prev.el.} + \gamma GP_{it} + \mathbf{Nat}_t' \boldsymbol{\beta}_1 + \mathbf{Mun}_{i,t-1}' \boldsymbol{\beta}_2 + \nu_i + \delta_t + \varepsilon_{it} \\
 & i = 1, \dots, 278 \quad t = 1979, 1980, 1983, 1985, 1987, 1991, 1995, 1999, 2002 \quad (1)
 \end{aligned}$$

<sup>5</sup> The income index takes into consideration the fiscal burden, electricity consumption, automobiles sales and the number of bank agencies and of retail stores in each municipality.

<sup>6</sup> Since part of the grants transferred to municipalities is formula-related, non-formula grants are more easily manipulated by opportunistic governments than total grants.

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where  $Votes_{it}$  is the percentage of votes obtained in municipality  $i$  by the incumbent government's principal party in the election of year  $t$ ,  $Votes_{i,prev.el.}$  is the percentage of votes it obtained in the previous election,  $GP_{it}$  stands for *Government's Party*, **Nat** is a vector of national economic variables (whose values are equal for all municipalities), **Mun** is a vector of municipal variables,  $v_i$  is the individual effect of municipality  $i$ ,  $\delta_t$  is a dummy variable for the election of year  $t$ ,  $\varepsilon_{it}$  is the error term,  $\alpha$  and  $\gamma$  are parameters and  $\beta_1$  and  $\beta_2$  are vectors of parameters to be estimated. Descriptive statistics for all variables used are reported in Table 2.

[Insert Table 2 about here]

4. Empirical results

The first set of estimations performed includes only the political and the national economic variables. In order to determine the relevant time horizon for the Portuguese voters, we expressed the national economic variables in two different ways: first, as percentage changes from the previous year; and, second, as average percentage annual changes over the entire term (since the previous election year).<sup>7</sup> Results of the panel data models, controlling for fixed effects<sup>8</sup> of municipalities and election-specific effects, are shown in Table 3. T-statistics are presented in parentheses and the degree of statistical significance is signalled with asterisks. The number of observations, municipalities and elections, and the adjusted R-squared are reported at the foot of the table.

<sup>7</sup> Since most Portuguese governments did not complete their terms, we have different term lengths in our sample. Thus, in order to make the changes in economic variables comparable over terms, they are expressed as average annual changes.

<sup>8</sup> Municipal dummy variables are globally statistically significant, and Hausman tests indicate that a fixed effects specification is always preferable to a random effects one.

**[Insert Table 3 about here]**

The results indicate that there is a high degree of persistence in the percentage of votes, as the estimated coefficient of *Votes (Previous Election)* is almost 0.9. The principal party in government seems to do worse in municipalities controlled by mayors affiliated with it. In line with Alesina and Rosenthal (1996), this result suggests that voters act strategically by trying to avoid the control of local and national governments by the same party.

Most of the results concerning national economic variables conform to our expectations. *National Inflation* has a negative sign and is statistically significant at the 1% significance level in all estimations except that of column 5; the *Change in the Unemployment Rate* has a negative coefficient and is also statistically significant at the 1% significance level; *GDP Growth* has a positive coefficient (although it is not statistically significant in column 2); and the *Change in Employment* and the *Change in the Industrial Production Index* have positive signs and are always highly statistically significant. Thus, these results confirm those of the vote/popularity function literature, according to which higher inflation and worse real economic performance (higher unemployment, lower growth, lower unemployment or lower industrial production) lead to lower votes and popularity. Concerning the time horizon relevant to voters, both annual changes in economic variables and changes over entire terms seem to matter. But, as estimated coefficients for the former are of higher magnitude, Portuguese voters seem to attach greater importance to the very recent past.

Municipal variables are included in the estimations of Table 4. The estimation reported in column 1 adds the *Change in Municipal Employment*, the *Change in Municipal Wages* and the *Percentage Annual Change in Non-Formula*

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*Grants to the Municipality* to the model of column 1 of Table 3. While annual changes in municipal employment and wages do not seem to affect votes, increasing grants to municipalities in election years leads to a higher vote percentage.<sup>9</sup> In column 2, the *Change in the Municipal Purchasing Power Index* is added to the model. Results indicate that increases in the purchasing power of a municipality relative to the country average are associated with greater percentages of votes for the incumbent. The change in the income index (column 3), is also positively signed and significant, implying that improvements in the municipal economy help the national government get more votes. Average changes over the term are used in columns 4 and 5. Results are very similar to those of columns 1 and 2, except that the *Change in Municipal Employment* is statistically significant in column 4.<sup>10</sup>

[Insert Table 4 about here]

**5. Conclusions**

Although Veiga and Veiga (2004a and 2004b) present evidence of the importance of economic conditions on vote-intentions and on the popularity of political entities in Portugal, the determinants of the votes cast in legislative elections had never been investigated. This derives, in part, from the fact that the Portuguese democracy has only existed 32 years, and the number of national elections observed is consequently small. This paper intends to fill this gap in the literature by using data disaggregated to the municipal level and combining the cross-

<sup>9</sup> Veiga and Pinho (2005) showed that Portuguese governments have in fact opportunistically increased grants to municipalities in election years.  
<sup>10</sup> The average change in the income index over the entire term is not statistically significant.

sectional and time-series dimensions, resulting in a panel with more than two thousand observations.

Results indicate that both national and local economic conditions influence electoral outcomes, and that the former play a major role. The performance of the national economy is taken into account by inflation, unemployment/employment, GDP growth and the industrial production index. All national economic indicators were significant determinants of votes, with strongest results obtained when variables were measured as percentage changes over the year preceding elections. Among the indicators of municipal economic performance employment, the purchasing power index, the income index, and the amount of non-formula grants received by municipalities from the national government also influence votes in legislative elections.

Our findings reinforce those of Veiga and Veiga (2004a, 2004b) that Portuguese voters hold incumbents responsible for the evolution of the economy. Economic voting is important in Portugal. They are also in line with most of the studies for other nations that highlight the stronger effect of national rather than local economic conditions on votes.

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Table 1: Legislative elections and parties in government

Dates of elections	Winning party	% Votes	Prime-Minister	Form of government
April 25, 1976	PS	34.9%	Mário Soares	One party, minority
-	-	-	Mota Pinto	Pres. appointment (1978-79)
-	-	-	M. L. Pintassilgo	Pres. appointment (1979-80)
December 2, 1979	AD	42.2%	Sá Carneiro	Coalition (PSD+CDS+PPM)
October 5, 1980	AD	44.4%	Pinto Balsemão	Coalition (PSD+CDS+PPM)
April 25, 1983	PS	36.3%	Mário Soares	Coalition (PS+PSD)
October 6, 1985	PPD/PSD	29.7%	Cavaco Silva	One party, minority
July 19, 1987	PPD/PSD	50.1%	Cavaco Silva	One party, majority
October 6, 1991	PPD/PSD	50.4%	Cavaco Silva	One party, majority
October 1, 1995	PS	43.8%	António Guterres	One party, minority
October 10, 1999	PS	44.0%	António Guterres	One party, minority
March 17, 2002	PPD/PSD	40.1%	Durão Barroso <sup>(a)</sup>	Coalition (PSD+CDS/PP)
February 20, 2005	PS	45.0%	José Sócrates	One party, majority

Source: Technical Staff for Matters Concerning the Electoral Process of the Internal Affairs Ministry.

Notes: PPD/PSD - People's Democratic Party / Social Democratic Party; PS - Socialist Party; CDS/PP - Democratic and Social Center / People's Party; PPM - Monarchic People's Party; AD = PSD + CDS + PPM.

(a) In July 2004 Durão Barroso resigned and a new government, also a coalition of PSD and CDS/PP was formed under the leadership of Santana Lopes.

**Table 2: Descriptive Statistics**

Variable	Observ.	Mean	Std.Dev.	Minimum	Maximum
Votes	2477	39.80	16.34	6.71	85.45
Votes (Previous Election)	2477	42.51	15.18	5.47	87.49
Government's Party	2475	0.42	0.49	0.00	1.00
National Inflation (%change in CPI) (Annual)	2477	12.79	8.27	2.30	25.11
National Inflation (Term)	2202	15.52	10.81	2.68	30.99
% Change in the Unemployment Rate (Annual)	2477	0.17	12.88	-17.73	24.08
% Change in the Unemployment Rate (Term)	2202	1.64	10.01	-10.53	18.38
Real GDP Growth (Annual)	2200	3.86	1.93	-0.17	8.44
Real GDP Growth (Term)	2202	3.01	1.79	0.51	4.94
Change in Employment (Annual)	2477	1.93	2.90	-2.18	8.68
Change in Employment (Term)	2202	1.58	2.06	-2.14	5.16
Change in the Industrial Production Index (Annual)	2477	3.35	3.27	-1.27	9.01
Change in the Industrial Production Index (Term)	2202	3.99	3.05	0.18	9.85
Change in Municipal Employment (Annual)	1357	3.38	11.66	-39.75	49.60
Change in Municipal Employment (Term)	1371	5.32	7.75	-33.73	48.52
Change in Municipal Real Wages (Annual)	1378	2.00	5.15	-26.97	26.07
Change in Municipal Real Wages (Term)	1378	2.68	3.12	-8.88	24.73
% Annual Change in Non-Formula Grants to the Municipality	1540	385.52	7336.33	-99.48	282104
% Annual Change in the Income Index	825	0.31	3.69	-13.79	31.82
% Change in the Purchasing Power Index (Annual)	825	1.58	5.32	-25.27	25.57
% Change in the Purchasing Power Index (Term)	825	7.62	14.28	-40.35	80.61

*Sources:* DGAL, IMF, INE, OECD, MTSS, Marktest, STAPE and municipal official accounts.

Table 3: Effects of the National Economy on Votes

Votes	Percentage changes from the previous year				Average percentage changes over term			
	1	2	3	4	5	6	7	8
Votes (Previous Election)	.895 (130)***	.851 (107)***	.895 (130)***	.895 (130)***	.885 (113)***	.885 (118)***	.885 (118)***	.885 (118)***
Government's Party	-.726 (-4.23)***	-.051 (-.27)	-.726 (-4.23)***	-.726 (-4.23)***	-1.043 (-5.28)***	-1.043 (-5.49)***	-1.043 (-5.49)***	-1.043 (-5.49)***
National Inflation (%change in CPI)	-.796 (-24.9)***	-1.535 (-19.8)***	-2.579 (-34.5)***	-10.762 (-37.9)***	.099 (6.18)***	-.273 (-22.5)***	-.185 (-15.9)***	-.677 (-28.5)***
Change in the Unemployment Rate	-.681 (-38.9)***				-.571 (-21.8)***			
GDP Growth		.109 (.35)				2.440 (23.8)***		
Change in Employment			22.581 (38.9)***				4.770 (23.8)***	
Change in the Industrial Production Index				28.714 (38.9)***				2.066 (23.8)***
# Observations	2475	2198	2475	2475	2201	2201	2201	2201
# Municipalities	278	275	278	278	278	278	278	278
# Elections	9	9	9	9	8	8	8	8
Adjusted R <sup>2</sup>	.94	.94	.95	.95	.93	.94	.94	.94

Notes: Panel regressions, for election years, controlling for fixed effects of municipalities and election years. Votes, the dependent variable, was defined as the percentage of votes obtained by the incumbent. Models estimated with a constant. T-statistics based on heteroskedastic consistent standard errors are in parenthesis. Significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%, and \*, 10%.

**Table 4: Effects of the National and Local Economies on Votes**

Votes	Percentage changes from the previous year			Average percentage changes over term	
	1	2	3	4	5
Votes (Previous Election)	.964 (107)***	.930 (97.8)***	.931 (94.3)***	.961 (106)***	.930 (94.8)***
Government's Party	-.192 (-.96)	-.885 (-4.24)***	-.876 (-4.21)***	-.193 (-.97)	-.884 (-4.26)***
National Inflation (change in CPI)	-2.427 (-30.4)***	-2.144 (-16.1)***	-2.150 (-15.6)***	-6.781 (-40.4)***	-.439 (-3.51)***
Change in the Unemployment Rate	-2.474 (-46.9)***	-.743 (-42.7)***	-.739 (-44.6)***	-9.182 (-42.5)***	-.536 (-26.2)***
Change in Municipal Employment	.012 (1.32)	-.012 (-1.24)		.043 (2.76)***	.003 (.17)
Change in Municipal Wages	.011 (.38)	-.015 (-.49)		.018 (.38)	-.015 (-.31)
Change in the Municipal Purchasing Power Index		.047 (1.99)**			.029 (3.37)***
Change in the Income Index			.030 (2.15)**		
% Annual Change in Non-Formula Grants to the Municipality	.00001 (2.02)***	.002 (2.34)**	.002 (2.67)***	.00001 (1.86)*	.002 (2.84)***
# Observations	1347	815	825	1361	823
# Municipalities	278	275	275	277	275
# Elections	5	3	3	5	3
Adjusted R <sup>2</sup>	.93	.93	.93	.93	.93

*Notes:* Panel regressions, for election years. Models estimated with a constant and election-year dummies. Votes, the dependent variable, was defined as the percentage of votes obtained by the incumbent. T-statistics based on heteroskedastic consistent standard errors are in parenthesis. Significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%, and \*, 10%.